IN THE CLAIMS:

1-21. (cancelled)

22. (new) A gas flow sensor, comprising:

a reference resistor element formed on a first electrically insulating substrate;

a flow-sensing resistor element formed on a second electrically insulating substrate, wherein said flow-sensing resistor is heated and said resistor elements are formed of an oxide electrically resistive material with a temperature coefficient of resistance between 2500 and 4500 ppm/°C; and

an electrical circuit in electrical communication with said reference resistor element and said flow-sensing resistor element.

23. (new) The gas flow sensor according to claim 22, wherein said oxide electrically resistive material comprises a ruthenium-containing oxide in a glassy matrix.

24. (new) The gas flow sensor of claim 22 wherein a temperature of said reference resistor is substantially similar to a temperature of a gas flow flowing past said resistors.

25. (new) The gas flow sensor of claim 24 wherein a predetermined temperature differential is maintained between said flow-sensing resistor and said reference resistor.

26. (new) The gas flow sensor of claim 22 wherein said gas is air.

27. (new) The gas flow sensor of claim 22, further comprising: an electrical circuit for determining a resistance of said reference resistor and a resistance of said flow-sensing resistor wherein a mass flow rate of said gas flow is a function of said resistances.

28. (new) The gas flow sensor of claim 22 wherein said electrical circuit is capable of maintaining a target temperature differential between said reference resistor element and said flow-sensing resistor element by controlling an electrical current flow to said flow-sensing resistor element.

29. (new) A method for fabricating a gas flow sensor, comprising:

printing a reference resistor element onto a first segment of an electrically insulating substrate;

printing a flow-sensing resistor element onto a second segment of said electrically insulating substrate wherein said reference and flow-sensing resistor elements are comprised of an oxide material having a temperature coefficient of resistance greater than 2500 ppm/°C.

30. (new) The method of claim 29 wherein said reference and flow-sensing oxide-containing resistors are comprised of one or more of: Pb, Ru, Si, and Bi.

31. (new) The method of claim 29, further comprising: providing an electrical circuit coupled to said reference and flow-sensing resistor elements.

32. (new) The method of claim 31 wherein said electrical circuit is capable of maintaining a target temperature differential between said reference resistor element and said flow-sensing resistor element by controlling an electrical current flow to said flow-sensing resistor element.

33. (new) A gas flow sensor, comprising:

a reference resistor element formed on a first segment of an electrically insulating substrate material and disposed in a gas flow without heating;

a flow-sensing resistor element formed on a second segment of said electrically insulating substrate material and disposed in said gas flow, said flow-sensing resistor element being heated to a temperature higher than the temperature of said reference resistor element, wherein said reference resistor element and said flow-sensing resistor element are formed of an oxide

electrically resistive material with a temperature coefficient of resistance greater than 2500 ppm/°C; and

an electrical circuit in electrical communication with said reference resistor element and said flow-sensing resistor element.

34. (new) The gas flow sensor according to claim 33, wherein said oxide electrically resistive material comprises a ruthenium-containing oxide in a glassy matrix.

35. (new) The gas flow sensor according to claim 33 wherein said ruthenium-containing oxide resistor elements comprises at least one of: Pb, Si and Bi.

36. (new) The gas flow sensor according to claim 33, wherein said reference resistor has an electrical resistance at least 10 times the electrical resistance of said flow-sensing resistor.

37. (new) The gas flow sensor according to claim 33, wherein said reference resistor element and said flow-sensing resistor element each have a thickness between 2 and 30 micrometers.

38. (new) The gas flow sensor according to claim 33, wherein said reference resistor element and said flow-sensing resistor element each has a thickness between 5 and 20 micrometers.

39. (new) The gas flow sensor according to claim 33 wherein said reference resistor element is formed in a serpentine configuration.

40. (new) The gas flow sensor according to claim 33 wherein said reference resistor element is formed in a serpentine configuration having vertical segments connected by horizontal segments with an aspect ratio of length/width of the resistor being at least 2.

41. (new) The gas flow sensor according to claim 38 wherein said electrical circuit maintains a target temperature differential between said reference resistor element and said flow-sensing resistor element by controlling an electrical current flowing to said flow-sensing resistor element.

42. (new) A method for fabricating a gas flow sensor, comprising: printing a reference resistor element onto a first segment of an electrically insulating substrate and a flow-sensing resistor element onto a second segment of said electrically insulating substrate wherein said reference and flow-sensing resistor elements are comprised of a ruthenium-containing electrically resistive oxide in a glassy matrix having a thickness between 2 and 30 micrometers.

43. (new) The method of claim 42 wherein said ruthenium-containing electrically resistive oxide has a temperature coefficient of resistance greater than 2500 ppm/°C.

44. (new) The method of claim 42, further comprising: providing an electrical circuit coupled to said reference and flow-sensing resistor elements.

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45. (new) The method of claim 44 wherein said electrical circuit is capable of maintaining a target temperature differential between said reference resistor element and said flow-sensing resistor element by controlling an electrical current flow to said flow-sensing resistor element.

46. (new) The method of claim 42 wherein a flow rate of gases across the gas flow sensor is a function of a current flowing through said flow-sensing resistor element.